

**The Journal of**

# **Membrane Biology**

**An international journal**

**for studies on the structure, function and genesis  
of biomembranes**

**Volume 95 1987**

## **Editorial Board**

**W.R. Loewenstein**, Miami, Editor-in-Chief

**Q. Al-Awqati**, Columbia

**P.F. Baker**, Kings, London

**G. Blobel**, Rockefeller

**D. Branton**, Harvard

**P. Cuatrecasas**, Glaxo

**J.M. Diamond**, California, L.A.

**D. Engelman**, Yale

**S. Fleischer**, Vanderbilt

**J.G. Forte**, California, Berkeley

**G. Guidotti**, Harvard

**J. Handler**, N.I.H.

**D.A. Haydon**, Cambridge

**A. Helenius**, Yale

**L. Heppel**, Cornell

**W.L. Hubbell**, California, L.A.

**R.B. Kelly**, California, S.F.

**A. Klug**, Cambridge

**P. Läuger**, Konstanz

**S.E. Luria**, MIT

**E.A.C. MacRobbie**, Cambridge

**D.J. Fritts**, Assistant to the Editor

**V.T. Marchesi**, Yale

**H.M. McConnell**, Stanford

**S. McLaughlin**, SUNY, Stony Brook

**I. Mellman**, Yale

**C. Miller**, Brandeis

**H. Murer**, Zurich

**Y.A. Ovchinnikov**, USSR Acad. Sci. Moscow

**G.E. Palade**, Yale

**E. Racker**, Cornell

**H. Reuter**, Bern

**B. Sakmann**, Max-Planck, Göttingen

**R. W. Schekman**, California, Berkeley

**S.G. Schultz**, Texas

**S.J. Singer**, California, S.D.

**C.L. Slayman**, Yale

**K.R. Spring**, N.I.H.

**C.F. Stevens**, Yale

**W. Stoeckenius**, California, S.F.

**D. Urry**, Alabama

**H.H. Ussing**, Copenhagen



**Springer International**

The exclusive copyright for all languages and countries, including the right for photomechanical and any other reproductions, also in microform, is transferred to the publisher

The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Printed in West Germany

© 1987 by Springer-Verlag New York Inc.

Forthcoming Papers

J.J. Fritts, Assistant to the Editor

Dr. J.J. Fritts, Assistant to the Editor, is a member of the editorial board of the journal. He is responsible for the selection and editing of manuscripts for publication. He is also responsible for the production of the journal.





# Author Index

Alegria, G., <i>see</i> Toro, M., et al. . . . .	1	Karlish, S.J.D., <i>see</i> Klaerke, D.A., et al. . . . .	105
Alva, R., <i>see</i> Toro, M., et al. . . . .	1	Kasianowicz, J., Benz, R., McLaughlin, S.: How do Protons Cross the Membrane-Solution Interface? Kinetic Studies on Bilayer Membranes Exposed to the Protonophore S-13 (5-chloro-3-tert-butyl-2'-chloro-4' nitrosalicylanilide) . . . . .	73
Arzt, E., <i>see</i> Toro, M., et al. . . . .	1	Klaerke, D.A., Karlish, S.J.D., Jørgensen, P.L.: Reconstitution in Phospholipid Vesicles of Calcium-Activated Potassium Channel from Outer Renal Medulla . . . . .	105
Asher, C., <i>see</i> Garty, H., et al. . . . .	151	Köhler, K., <i>see</i> Kolb, H.-A., et al. . . . .	163
Avenet, P., Lindemann, B.: Action Potentials in Epithelial Taste Receptor Cells Induced by Mucosal Calcium. . . . .	265	Kolb, H.-A., Köhler, K., Martinoia, E.: Single Potassium Channels in Membranes of Isolated Mesophyll Barley Vacuoles . . . . .	163
Beck, F.X., <i>see</i> Rick, R., et al. . . . .	229	Krumpholz, B., <i>see</i> Graf, J., et al. . . . .	241
Bentzel, C.J., Fromm, M., Palant, C.E., Hegel, U.: Protamine Alters Structure and Conductance of <i>Necturus</i> Gallbladder Tight Junctions without Major Electrical Effects on the Apical Cell Membrane . . . . .	9	Lapointe, J.-Y., Hudson, R.L., Schultz, S.G.: <i>Erratum</i> . . . . .	187
Benz, R., <i>see</i> Kasianowicz, J., et al. . . . .	73	Levitt, D.G., <i>see</i> Light, D.B., et al. . . . .	63
Bottà, G., <i>see</i> Cremaschi, D., et al. . . . .	209, 219	Li, J.H.-Y., Cragoe, E.J., Jr., Lindemann, B.: Structure-Activity Relationship of Amiloride Analogs as Blockers of Epithelial Na Channels: II. Side-Chain Modifications . . . . .	171
Boyer, J.L., <i>see</i> Graf, J., et al. . . . .	241	Light, D.B., Van Eenennaam, D.P., Sorenson, R.L., Levitt, D.G.: Potassium-Selective Ion Channels in a Transformed Insulin-Secreting Cell Line . . . . .	63
Breemen, J.F.L. van, <i>see</i> Rupert, L.A.M., et al. . . . .	255	Lindemann, B., <i>see</i> Avenet, P. . . . .	265
Bridges, R.J., <i>see</i> Reinhardt, R., et al. . . . .	47	Lindemann, B., <i>see</i> Garty, H., et al. . . . .	91
Bruggen, E.F.J. van, <i>see</i> Rupert, L.A.M., et al. . . . .	255	Lindemann, B., <i>see</i> Li, J.H.-Y., et al. . . . .	171
Cerbón, J., <i>see</i> Toro, M., et al. . . . .	1	Lindemann, B., <i>see</i> Reinhardt, R., et al. . . . .	47
Chevalier, J., Pinto da Silva, P.: Osmotic Reversal Induces Assembly of Tight Junction Strands at the Basal Pole of Toad Bladder Epithelial Cells but Does Not Reverse Cell Polarity . . . . .	199	Maga, L., <i>see</i> Robello, M., et al. . . . .	55
Christophersen, P., <i>see</i> Vestergaard-Bogind, B., et al. . . . .	121	Martinoia, E., <i>see</i> Kolb, H.-A., et al. . . . .	163
Ciani, S., <i>see</i> Robello, M., et al. . . . .	55	McLaughlin, S., <i>see</i> Kasianowicz, J., et al. . . . .	73
Clausen, C., <i>see</i> Wills, N.K. . . . .	21	Meas, Y., <i>see</i> Toro, M., et al. . . . .	1
Cragoe, E.J., Jr., <i>see</i> Li, J.H.-Y., et al. . . . .	171	Meyer, G., <i>see</i> Cremaschi, D., et al. . . . .	209, 219
Cremaschi, D., Meyer, G., Bottà, G., Rossetti, C.: The Nature of the Neutral Na <sup>+</sup> -Cl <sup>-</sup> -Coupled Entry at the Apical Membrane of Rabbit Gallbladder Epithelium: II. Na <sup>+</sup> -Cl <sup>-</sup> Symport Is Independent of K <sup>+</sup> . . . . .	219	Murrell, R.D., <i>see</i> Elliott, J.R., et al. . . . .	143
Cremaschi, D., Meyer, G., Rossetti, C., Bottà, G., Palestini, P.: The Nature of the Neutral Na <sup>+</sup> -Cl <sup>-</sup> -Coupled Entry at the Apical Membrane of Rabbit Gallbladder Epithelium: I. Na <sup>+</sup> /H <sup>+</sup> , Cl <sup>-</sup> /HCO <sub>3</sub> <sup>-</sup> Double Exchange and Na <sup>+</sup> -Cl <sup>-</sup> Symport . . . . .	209	Padan, E., Schuldiner, S.: Intracellular pH and Membrane Potential as Regulators in the Prokaryotic Cell . . . . .	189
Dörge, A., <i>see</i> Rick, R., et al. . . . .	229	Palant, C.E., <i>see</i> Bentzel, C.J., et al. . . . .	9
Elliott, J.R., Murrell, R.D., Haydon, D.A.: Local Anesthetic Action of Carboxylic Esters: Evidence for the Significance of Molecular Volume and for the Number of Sites Involved . . . . .	143	Palestini, P., <i>see</i> Cremaschi, D., et al. . . . .	209
Engberts, J.B.F.N., <i>see</i> Rupert, L.A.M., et al. . . . .	255	Pinto da Silva, P., <i>see</i> Chevalier, J. . . . .	199
Estrada-O, S., <i>see</i> Toro, M., et al. . . . .	1	Reinhardt, R., Bridges, R.J., Rummel, W., Lindemann, B.: Properties of an Anion-Selective Channel from Rat Colonic Enterocyte Plasma Membranes Reconstituted into Planar Phospholipid Bilayers . . . . .	47
Fresia, M., <i>see</i> Robello, M., et al. . . . .	55	Rick, R., Beck, F.X., Dörge, A., Thureau, K.: Intracellular Ion Concentrations in the Frog Cornea Epithelium During Stimulation and Inhibition of Cl Secretion . . . . .	229
Fromm, M., <i>see</i> Bentzel, C.J., et al. . . . .	9	Ritchie, R.J., Gibson, J.: Permeability of Ammonia, Methylamine and Ethylamine in the Cyanobacterium, <i>Synechococcus</i> R-2 ( <i>Anacystis nidulans</i> ) PCC 7942 . . . . .	131
Garty, H., Asher, C., Yeger, O.: Direct Inhibition of Epithelial Na <sup>+</sup> Channels by a pH-Dependent Interaction with Calcium, and by Other Divalent Ions . . . . .	151	Robello, M., Fresia, M., Maga, L., Grasso, A., Ciani, S.: Permeation of Divalent Cations Through $\alpha$ -Latrotoxin Channels in Lipid Bilayers: Steady-State Current-Voltage Relationships . . . . .	55
Garty, H., Warncke, J., Lindemann, B.: An Amiloride-Sensitive Na <sup>+</sup> Conductance in the Basolateral Membrane of Toad Urinary Bladder . . . . .	91	Rossetti, C., <i>see</i> Cremaschi, D., et al. . . . .	209, 219
Gibson, J., <i>see</i> Ritchie, R.J. . . . .	131	Rummel, W., <i>see</i> Reinhardt, R., et al. . . . .	47
Graf, J., Henderson, R.M., Krumpholz, B., Boyer, J.L.: Cell Membrane and Transepithelial Voltages and Resistances in Isolated Rat Hepatocyte Couplets . . . . .	241	Rupert, L.A.M., Breemen, J.F.L. van, Bruggen, E.F.J. van, Engberts, J.B.F.N., Hoekstra, D.: Calcium-Induced Fusion of Didodecylphosphate Vesicles: The Lamellar to Hexagonal II (H <sub>II</sub> ) Phase Transition . . . . .	255
Grasso, A., <i>see</i> Robello, M., et al. . . . .	55	Schleicher, A., Hofmann, K.-P.: Kinetic Study on the Equilibrium between Membrane-Bound and Free Photoreceptor G-Protein . . . . .	271
Haydon, D.A., <i>see</i> Elliott, J.R., et al. . . . .	143	Schuldiner, S., <i>see</i> Padan, E. . . . .	189
Hegel, U., <i>see</i> Bentzel, C.J., et al. . . . .	9	Schultz, S.G., <i>see</i> Lapointe, J.-Y., et al. . . . .	187
Henderson, R.M., <i>see</i> Graf, J., et al. . . . .	241	Sorenson, R.L., <i>see</i> Light, D.B., et al. . . . .	63
Hoekstra, D., <i>see</i> Rupert, L.A.M., et al. . . . .	255		
Hofmann, K.-P., <i>see</i> Schleicher, A. . . . .	271		
Hori, H., <i>see</i> Takenaka, T., et al. . . . .	113		
Horie, H., <i>see</i> Takenaka, T., et al. . . . .	113		
Hudson, R.L., <i>see</i> Lapointe, J.-Y., et al. . . . .	187		
Jørgensen, P.L., <i>see</i> Klaerke, D.A., et al. . . . .	105		



Stampe, P., <i>see</i> Vestergaard-Bogind, B., et al. . . . .	121
Takenaka, T., Horie, H., Hori, H.: Effects of Fatty Acids on Membrane Currents in the Squid Giant Axon . . . . .	113
Thurau, K., <i>see</i> Rick, R., et al. . . . .	229
Toro, M., Arzt, E., Cerbón, J., Alegría, G., Alva, R., Meas, Y., Estrada-O, S.: Formation of Ion-Translocating Oligomers by Nigericin . . . . .	1
Van Eenennaam, D.P., <i>see</i> Light, D.B., et al. . . . .	63
Vestergaard-Bogind, B., Stampe, P., Christophersen, P.: Voltage Dependence of the $\text{Ca}^{2+}$ -Activated $\text{K}^{+}$ Conductance of Human Red Cell Membranes is Strongly Dependent on the Extracellular $\text{K}^{+}$ Concentration . . . . .	121

Warncke, J., <i>see</i> Garty, H., et al. . . . .	91
Wills, N.K., Clausen, C.: Transport-Dependent Alterations of Membrane Properties of Mammalian Colon Measured Using Impedance Analysis . . . . .	21
Wright, S.H.: Alanine and Taurine Transport by the Gill Epithelium of a Marine Bivalve: Effect of Sodium on Influx . . . . .	37
Yeger, O., <i>see</i> Garty, H., et al. . . . .	151

Covered in *Current Contents*, *SCI*, *ASCA* and *ISI BIOMED*